The sensor assembly inside the M88 Detector contains radioactive material in the form of two Nickel-63 sources. Do not attempt to open the M88 Detector or gain access to the radioactive source.

SAFETY, CARE, AND HANDLING

WARNING

Do not open the detector case. The M22 contains two identical 10 millicurie (370 Megabequerel (Mbq), foil Nickel 63 radioactive sources (a total of 20 mCi (740 Mbq)) per M22.

Rules and Regulations. The radioactive sources in the M22 are controlled by the United States Nuclear Regulatory Commission (NRC), Title 10, Code of Federal Regulations and are registered with the NRC. Army Regulation (AR) 385-11, AR 700-64, Air Force Instruction (AFI) 40-201, Naval Sea Systems Command Program Manual (NAVSEA) S0420-AA-RAD-010, and Marine Corps Order (MCO) 5104.3 implement NRC regulations.

Marine Corps-wide possession and use of cell modules is authorized by NRC Master Materials License issued to the Chief of Naval Operations. Marine Corps equipment and management procedures will be used to ensure accountability and control of the M22. Authorized units shall maintain accountability of the M22 using Marine Corps standard base supply procedures for equipment management.

NRC Posting Requirements. Federal law requires certain notices and standards be made available to all users of licensed radioactive material. Appendix H contains instructions about regulations and NRC Form 3, Notice to Employees. Obtain a copy of the NRC Form 3 from your local Radiation Protection Officer (RPO) or Radiation Safety Officer (RSO). This information will be posted/displayed on bulletin boards in work areas where operators and/or unit maintenance actions are performed.

Emergency Procedures

In a fire emergency, the basic concern is airborne contamination carried out by flames, by heated air, and in smoke. Fire should be fought with fire fighting personnel standing upwind of the fire. Fire fighters should wear portable air systems. After the fire has been extinguished, debris shall be surveyed for presence of equipment containing Ni-63 sources as well as contamination which may have spread by burning. A suitable Radiation Indicating and Computation (RADIAC) device such as a AN/PDR-27, VDR-2, or ADM-300 is used for detecting the location of Ni-63; however, wipes must be taken and evaluated by a liquid scintillation spectrometer (or equivalent) to detect the presence of contamination. Use the appropriate RADIAC to determine a radioisotopic hazard in accordance with instructions from the local RPO/RSO or applicable RADIAC technical manuals/orders. Follow-up evaluation of wipes on suitable laboratory equipment (liquid scintillation spectrometer or equivalent) must be made. Double bag any suspect items or pieces which may have contamination on them.

Marine Corps Notification Procedures. Notify both the local Radiation Safety Officer (RSO) and USMC Logistical Radiation Safety Officer (LRSO). The LRSO may be contacted by calling DSN 567-6213/6215 or Commercial (912)439-6213/6215. Follow the directions from the LRSO and local RSO for packaging and returning the parts to the appropriate depot for disposal.

WARNING

If the M88 Detector has been exposed to actual agents, the old inlet must be disposed of as contaminated waste in accordance with local regulations.

WARNING

The sensor assembly inside the M88 Detector contains two Nickel-63 sources of radioactive material. Do not attempt to open the M88 Detector.

(MARINE CORPS ONLY) **MARINE CORPS WIPE TEST PROCEDURES**. Marine Corps wipe testing will be accomplished at the unit level at the frequencies contained in the Navy Radioactive Materials Permit and upon transfer to another installation. Proper submission of wipe samples and the

accompanying label is critical to receiving an accurate and timely report. Please take a short time to familiarize yourself with proper collection and submission procedures listed below prior to performing the wipe test procedure.

NOTE

The M88 Detector contains two identical, 10 millicurie (mCi) (370 Mbq), foil Nickel 63 radioactive sources, totaling 20 mCi (740 Mbq) per detector as indicated by radioactive material label located on the top of the detector (figure 4-2).

Preparation of the Wipe Label. Using a ball point pen, prepare the label as shown in figure 4-3.

WIPE TEST LABEL		
NAME, ADDRESS, TELEPHONE NUMBER AND RUC OF USING ACTIVITY		DATE SUBMITTED 18 Dec 96
		RADIAC READING
NAME, TELEPHONE NUMBER AND RUC OF PERSON PERFORMING TEST GySgt John Marine, DSN 123-4567		AREA WIPED
RADIONUCLIDE OR TYPE OF RADIATION Nickel 63 (2 OFF), 0.02 Curies (Total)		DETECTOR NUMBER Detector Ser # + Detector Lot #
BASE SAMPLE NUMBER	DATE RECEIVED	MODULE NUMBER Module Ser # + Module Lot #
SENT TO: **Commander** **Attn Code 884 RADIAC Calibration** **Marine Corps Logistics Bases** **814 Radford Blvd** **Albany GA 31704-1128**		
MAIL ROOM - DO NOT OPEN		

Figure 4-3, Marine Corps Label

Name and address of submitting activity. Name, address, phone number and RUC of using activity.

Name and telephone number of person performing test. Name, phone number and RUC of the person submitting the wipe sample

Radionuclide or type of radiation. Obtained from the data tag on the top of the detector.

Detector number. Detector serial number and lot number (Figure 4-2, item 3).

Module number. Module serial number and lot number (Figure 4-2, item 4).

Wipe Collection Procedures:

Position the M88 on a clean work surface (e.g., table or hard dry ground).

Put on disposable gloves.

Leave the wipe disk on the wipe disk folder

Wipe the exterior surface of the M88 (Figure 4-2, item 1) and around the inlet (Figure 4-2, item 5) and outlet (Figure 4-2, item 2) with the wipe disk.

NOTE

Perform the following procedures in an area that is free from all radiation, except normal background radiation.

Using a AN/VDR-2 meter, check the wipe test cloth for contamination as follows:

Turn on meter and open the beta shield of the AN/VDR-2 to expose beta window.

Place wipe disk (located on wipe disk folder) approximately $\frac{1}{4}$ inch in front of the probe and note RADIAC indication. DO NOT TOUCH THE PROBE WITH THE WIPE.

WARNING

Any sustained reading of the AN/VDR-2 (or equivalent meter) that is twice background may indicate nickel 63 contamination. If the reading is over twice background, discontinue use of the ACADA, and place in two individually sealed plastic bags until the wipe test is analyzed by MARCORLOGBASES Albany. If the laboratory verifies that nickel 63 contamination is present,

disposition instructions for contaminated ACADA will be provided by MARCORLOGBASES. If the sustained reading is less than twice background level, the ACADA may be returned to use.

Fold the wipe disk folder at dotted line (wipe disk inside), place in interlocking seal plastic bag and seal.

Place interlocking seal plastic bag in wipe test label envelope and seal with tape.

WARNING

Do not lick envelopes to seal as ingestion of Nickel 63 may result. Use tape only to seal envelopes.

Place sealed, marked envelope in second envelope with mailing label attached, seal with tape and mail to:

Commander
Attn Code 884 RADIAC Calibration
Marine Corps Logistics Bases
814 Radford Blvd
Albany GA 31704-1128

Place only one wipe sample per Wipe Test Label envelope. Multiple Wipe Test Label envelopes may be placed in the second (mailing) envelope.

Remove and discard disposable gloves and wash hands with soap and water.

If maintenance is required, ACADA must be held and tagged until wipe test results are received.

Results of wipe test evaluation will be reported to COMMARCORLOGBASES (Codes 835-3 and 136) and to the submitting activity.

Assistance can be obtained from the Marine Corps Logistical Radiation Safety Officer at DSN 567-6231 or COM (912)439-6231.